

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/EP2004/052380

International filing date (day/month/year)
30.09.2004

Priority date (day/month/year)
30.09.2003

International Patent Classification (IPC) or both national classification and IPC
F16C13/02, C23C2/00, F16C23/04, F16C33/10, F16C33/66, F16C33/58

Applicant
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1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

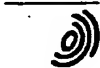
If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

10/573392

International application No.
PCT/EP2004/052380

IAP20 Rec'd PCT/PTO 23 MAR 2006

Box No. 11 Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/EP2004/052380

Box No. II^a Priority

1. ☒ The following document has not been furnished:

- ☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).
- ☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. ☐ It has not been possible to consider the validity of the priority claim because a copy of the priority document was not available to the ISA at the time that the search was conducted (Rule 17.1). This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.
4. Additional observations, if necessary:

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	2-6
	No: Claims	1
Inventive step (IS)	Yes: Claims	
	No: Claims	1-6
Industrial applicability (IA)	Yes: Claims	1-6
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING
AUTHORITY (SEPARATE SHEET)

International application No.

PCT/EP2004/052380

Re Item V

Reasoned Statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such Statement.

1 Reference is made to the following documents

- D1: US-A-5 549 393 (MORANDO JORGE A) 27 August 1996 (1996-08-27)
- D2: US-A-3 796 471 (HOLM W) 12 March 1974 (1974-03-12)
- D3: PATENT ABSTRACTS OF JAPAN vol. 1999, no. 03, 31 March 1999 (1999-03-31) - & JP 10 317119 A (SUZUKI TEKKOSHO:KK), 2 December 1998 (1998-12-02)
- D4: US-A-6 065 876 (YASHIRO TOSHINORI ET AL) 23 May 2000 (2000-05-23)
- D5: US-A-5 099 780 (NAPPIER ROBERT W ET AL) 31 March 1992 (1992-03-31)
- D6: US-A-5 072 689 (OOKOUCHI TAKAHIKO ET AL) 17 December 1991 (1991-12-17)
- D7: DE 42 07 034 A (EICH JOSEPH KG & PARTNER GMBH) 16 September 1993 (1993-09-16)
- D8: US 2003/111779 A1 (MORANDO JORGE A) 19 June 2003 (2003-06-19)

2 INDEPENDENT CLAIM 1.

- 2.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT.

The document D1, regarded as being the closest prior art to the subject matter of claim 1 discloses, see especially col.1 lines 54-58, and col.2 line 59 to col.3 line 23, references applying to this document:

A support bearing for a roll (10), *which can be* adapted to be immersed in a liquid metal bath, defining a first rotation axis (66), comprising

- a first bush (34) fitted coaxially on pins (14) at the end of a roll (10) and with substantially cylindrical outer surface,
- a second bush (54) fixed to a supporting element (30) of the roll (10) wherein the first bush (34) is held inside the second bush (54) rotatably around the axis (66),

wherein the second bush (54) has an outer convex (56) surface defining a toroidal surface characterised in that

the first and second bush (34, 54) define, during operation, a reciprocal contact surface throughout their common length, the second bush (54) is positioned inside a retaining ring (42,44,48) of the supporting element (30), said retaining ring having a substantially cylindrical inner surface whereby the bearing is suitable to rotate, substantially without friction, around a second axis orthogonal to the first axis (66).

Since all the features of claim 1 can be identified in D1 the subject matter of claim 1 is not new.

- 2.2 Furthermore the same objection is raised in the light of document D2, see the search report for relevant passages.

3 DEPENDENT CLAIMS 2.

The characteristic feature of dependent claim 2, namely the grooved pattern on the outside of the rotating first bush, is mainly shown in document D3 (see fig. 2 and 4) thus, claim 2 does not contain any feature which, in combination with the features of any claim to which it refers, meet the requirements of the PCT in respect of novelty and/or inventive step.

- 3.2 Furthermore the same objection is raised in the light of document D4, see the search report for relevant passages.

4 DEPENDENT CLAIMS 3-4.

- 4.1 The characteristic feature of dependent claim 3, namely the axial longitudinal grooves on the inner surface of the stationary second bush, is mainly shown in document D5 (see fig. 3,4,5 and col. 4 lines 50-58) thus, claim 3 does not contain any feature which, in combination with the features of any claim to which it refers, meet the requirements of the PCT in respect of novelty and/or inventive step.

- 4.2 Same reasoning applies for claim 4 based on same document D5.

Dependent claim 4 does not contain any feature which, in combination with the features of any claim to which it refers, meet the requirements of the PCT in respect of novelty and/or inventive step.

5 DEPENDENT CLAIMS 5,6.

The feature of dependent claims 5 (respectively 6) concerns minor constructional feature which is merely one of several straightforward possibilities from which the skilled person would select, in accordance with circumstances, without the exercise of inventive skill, in order to solve the problem posed.

Dependent claims 5,6 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step, see documents D6, D7, D8 and the corresponding passages cited in the search report.

Re Item VII

Certain defects in the international application

- 1** In the description page 3 line 22 to page 4 line 9, it seems that the prior art document is referred to with wrong reference numbers.